

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch
690 Walnut Ave. St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4Cty: SF/Ala Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:** Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-009825**Date Inspected:** 14-Oct-2009**Project Name:** SAS Superstructure**OSM Arrival Time:** 1900**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 700**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** See below**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** Tower and OBG Components**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance Inspector George Goulet was present during the times noted above for observations relative to the work being performed.

Bay 10

This QA Inspector randomly observed the following work in progress in Bay 10:

SMAW welding of weld joints ED1-A6003-8-41, 42 located on PCMK east tower strut. Welder was identified as 057258. ZPMC QC was identified as CWI Wang Chuan Qing (QC1). Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC Li Peng Fei, who was not a CWI. The welding variables recorded by QC1 and QC1's assistant appeared to comply with WPS-B-T-2113.

SMAW welding of weld joints ED1-A6003-8-43, 44 located on PCMK east tower strut. Welder was identified as 050289. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC Li Peng Fei, who was not a CWI. The welding variables recorded by QC1 and QC1's assistant appeared to comply with WPS-B-T-2113.

SMAW welding of weld joints ED1-A6003-7-17, 18 located on PCMK east tower strut. Welder was identified as 056200. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC Li Peng Fei, who was not a CWI. The welding variables recorded by QC1 and QC1's assistant appeared to comply with WPS-B-T-2113.

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SMAW welding of weld joint ED1-A6003-7-20 located on PCMK east tower strut. Welder was identified as 040582. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC Li Peng Fei, who was not a CWI. The welding variables recorded by QC1 and QC1's assistant appeared to comply with WPS-B-T-2113.

FCAW welding of weld joints SSTL4-1C/L-139, 155 located inside PCMK south tower, lift 4, skin D to 119M double diaphragm. Welders were identified respectively as 040343, 057266. ZPMC QC was identified as QC1. Assisting QC1 at this location and appearing to be monitoring the welding and recording data was ZPMC Sun Tian Jiang, who was not a CWI. The welding variables recorded by QC1 and QC1's assistant appeared to comply with WPS-B-T-4332-TC-P5-F.

This QA Inspector observed arc strikes on skin D near skin stiffener D1 and within one meter below double diaphragm 119M of south tower, lift 4. The area was marked and reported to QC1. See photos below.

Bay 11

This QA Inspector randomly observed the following work in progress in Bay 11:

SAW welding of weld joints WD1-STSA3-2-99M-1-1A, WD1-STSA3-2-99M-2-1A, WD1-STSA3-2-99M-1-2B, WD1-STSA3-2-99M-2-2B located on PCMK west tower. Welder was identified as 202756. ZPMC QC was identified as Xu Le Feng (QC2). Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Yuan Wen Jie, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-4221-B-U3c-S-1.

SAW welding of weld joints WD1-SA3-18-99M-5-1B, WD1-SA3-18-99M-6-1B located on PCMK west tower. Welder was identified as 042195. ZPMC QC was identified as QC2. Assisting QC2 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Inspector Yuan Wen Jie, who was not a CWI. The welding variables recorded by QC2's assistant appeared to comply with WPS-B-T-3221-TC-U5-S-1.

SMAW tack welding of various temporary attachment alignment devices on the west tower shaft, lift 1/lift 2 joint, skin E. Welder was identified as 053310. ZPMC QC was identified as CWI Li Hong Fei (QC3). Assisting QC3 at this location and appearing to be monitoring the welding and recording data was ZPMC QC Shi Yu. The welding variables recorded by QC3's assistant appeared to comply with WPS-B-T-2132 and WPS-B-T-2133.

Bay 9 – PMT

This QA Inspector monitored OBG Production Monitoring Test (PMT) #3007 for deck panels DP3007-001, DP3048A-001, and DP3002A-001 at Gantry #2. Prior to the start of the PMT, the magnetic particle test (MT) of the tack welds was noted on the test panel as having been performed by ZPMC MT Inspector Ding A Cheng on 10/14/09. The visual inspection of tack welds and root gap was performed by ABF Representative Wang Wan Shong (ABF), ZPMC CWI Sun Bo (QC), and this QA Inspector. The start time for welding of the 3–12mm x 20mm specimens was approximately 0016 hours on 10/15/09 and the finish time was approximately 0059 hours. This QA Inspector randomly verified and documented the welding amperage, voltage, and travel speed during the gas metal arc welding (GMAW) and submerged arc welding (SAW) processes, welds 1 thru 6 at the completion of both the GMAW root pass and SAW cover pass. The welding variables recorded by QC appeared to comply with

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WPS-B-T-2342-U1-(U-rib)-4. The welds were visually inspected by ABF, QC and this QA Inspector. QC and ABF informed this QA Inspector that all six welds were acceptable and this QA Inspector concurred. This QA Inspector randomly witnessed ZPMC ultrasonic testing (UT) inspector, identified as Tang Xingshan, perform UT on each of the 500 mm test welds for depth of penetration and conformance. This QA Inspector selected fifteen designated locations for macroetch sampling per contract requirements. Each macroetch location was stamped by ZPMC personnel with the number 3007, the letter M, and an individual macroetch identifying number for each macroetch. After removal from each of the weld test specimens, polishing, and acid etching of the selected end, the macroetches were evaluated with a 7X optical magnifier and accepted by QC, ABF, and this QA Inspector.

All fifteen sample macros appeared to generally comply with applicable contract documents and were noted to appear acceptable. See Caltrans U-ribs PMT Inspection Sheet, ZPMC production monitoring test plate inspection report, and Caltrans Macro Etch Log - all dated 10/15/2009 for additional information.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.



Summary of Conversations:

No relevant conversations except as noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Serge Sinevod, 134-8257-0045, who represents the Office of Structural Materials for your project.

Inspected By: Goulet, George

Quality Assurance Inspector

Reviewed By: Dawson, Paul

QA Reviewer